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TWO-YEAR EDUCATION IN MONTANA

Prepared for the

Postsecondary Education Policy and Budget Committee

by

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Two-Year Education in Montana

'he highest study priority of the Postsecondary Education Policy and Budget (PEPB) Committee is two-ear education in Montana. Committee discussion and individual members indicated interest in having nformation that would allow them to discuss policy issues related to two-year education. Therefore, the urposes of this report are to: 1) provide background information; 2) project enrollments compared to apacity; 3) compare current data for the types of postsecondary two-year education; and 4) address ome of the policy issues surrounding two-year education.

Background

'ertificate and two-year postsecondary education in Montana is provided by: 1) colleges of technology, ormerly called vocational technical centers; 2) public and Native American community colleges; and) state university units. While each type of school has a major mission, programs on some campuses nay overlap programs on other campuses throughout the system. However, programs in the individual ommunities are generally provided to: 1) allow students to remain at home for the first part of their ducations, thus reducing costs; 2) allow place-bound students to continue their formal educations; or) provide job skills training.

'olleges of Technology

'he five colleges of technology in Butte, Helena, Missoula, Great Falls, and Billings were part of the ocal public school districts until the 1987 legislature transferred their governance to the Board of egents (Regents). The Regents oversaw independent vocational technical centers until the entire niversity system was reorganized during the 1995 biennium. As a result of that reorganization, the olleges in Butte, Helena, and Missoula were attached to the University of Montana (UM) and those in illings and Great Falls were attached to Montana State University (MSU).

he 1995 legislature passed Senate Bill 156, which integrated the colleges of technology into the niversities and eliminated statutory references to those colleges as individual entities in the 1997 iennium. Senate Bill 156 also provided that 1.5 mills levied against all taxable property in the local istricts for the colleges of technology be remitted to the state general fund in fiscal 1997 for legislative ppropriation. The legislature included a general fund appropriation to replace the millage in fiscal 1997.

he statutory purpose for colleges of technology is to provide courses that recognize the present and uture needs of employers and provide qualified graduates for positions for which there is a demand Title 20, Chapter 16, MCA). These colleges are market oriented, generally training workers to do pecific jobs needed in the community or state at a cost less than that at four-year institutions. In ddition, they provide continuing training as technology changes.

'olleges of technology currently offer certificates or associate of applied science degrees for specific ocations, rather than associate of arts degrees designed to provide transfer credits to a four-year college r university. However, with the re-structuring of the university system, the colleges of technology are

considering ways to offer a two-year core curriculum of credits acceptable to all units of the system. Current vocational programs include:

1) Helena College of Technology - computer technology, office technology, accounting, industrial electronics, and automotive maintenance;

2) Division of Technology in Butte - information processing, accounting, environmental sampling and hazardous waste, nursing, and drafting;

3) Great Falls College of Technology - health programs (such as respiratory, occupational, or physical therapy), business management and entrepreneur training, accounting, microcomputers, and interior design;

4) Billings College of Technology - computer aided drafting, heating/air conditioning/ventilation, nursing, and automotive programs; and

5) Missoula College of Technology - food service management, diesel equipment technology, business, medical office technology, and a legal secretarial course.

Community Colleges

Community colleges in Montana are of two types - public and Native American. They provide equal opportunities, without regard for race, for students to "gain college-level skills, to complete a two-year college program, to complete the first two years of a four-year college program, to gain or upgrade job skills, and to learn for personal growth and enrichment" (Flathead Valley Community College mission statement). In addition to educational goals, the Native American colleges also seek to maintain the cultural integrity of the associated tribes.

Public Community Colleges

The three public community colleges are Miles Community College (MCC) in Miles City, Dawson Community College (DCC) in Glendive, and Flathead Valley Community College (FVCC) in Kalispell. These schools are accredited by the Northwest Association of Schools and Colleges, and the educational programs are approved by the Montana Board of Regents. Articulation agreements for the transfer of credits to other post secondary schools in Montana have been completed. However, additional effort is being focused on development of a core curriculum of credits that will be acceptable in all units of the university system.

The 1995 legislature considered, but did not pass, Senate Bill 396 to integrate the community colleges into the university system. The purpose of integration as proposed in that bill was to allow the community colleges to be part of a seamless public university system offering the broadest range of service to Montana students. Issues surrounding integration are:

1) reduction of local control if the boards of trustees are replaced with advisory boards;
2) changing the mission of the community colleges to either a vocational school or a junior college serving only students expecting to transfer to another school. The current mission combines both

forms of education;

3) reductions in local property tax support of the colleges with increasing state tax support;

4) possible community college access to more administrative and academic support.

Native American Community Colleges

The seven Native American community colleges are: 1) Fort Belknap College in Harlem; 2) Dull Knife Memorial College in Lame Deer; 3) Salish Kootenai College near Pablo; 4) Big Horn College at Crow Agency; 5) Blackfeet College at Browning; 6) Stone Child College near Box Elder; and 7) Fort Peck Community College in Poplar. These schools are either accredited or applying for accreditation by the Northwest Association of Schools and Colleges. Articulation agreements for the transfer of credits to other postsecondary schools in Montana have not been finalized.

The 1995 legislature approved House Bill 544 to offset tribal college subsidies for non-beneficiary students. Its purpose is to allow non-beneficiary students a continued or greater access to quality, low-cost, and accessible programs in tribal colleges. The bill appropriated $1.4 million general fund for the biennium to the Board of Regents to provide financial assistance to the seven Native American colleges for enrolled non-beneficiary students. This support, limited to a maximum of $1,500 per year per full-time student, is provided directly to the school. It may not result in fee waivers or other reduced costs for all non-beneficiary students. To the extent that the bill does result in fee waivers, non-beneficiary students near an Indian college may be encouraged to enroll locally to begin their educations. The legislation includes the requirements that the Native American schools:

1) enter into a state-tribal cooperative agreement;
2) be accredited or applying for accreditation;
3) grant fee waivers to resident non-beneficiary students in the same percentage as the number of Indian students who are receiving fee waivers at state units bears to the total enrollment in the university system; and
4) subtract the costs of non-beneficiary fee waivers from the total amount to be distributed.

Course offerings vary from college to college but include: 1) two-year associate of arts and science degrees, which generally are transfer degrees representing the first two years of a baccalaureate program at a four-year university; 2) associate of applied science degrees representing training in vocational fields; and 3) one-year certificates of completion in fields such as communications, clerical work, and parts specialists. Some Native American colleges also offer a limited number of bachelor's degrees in areas such as communications and human relations.

Vocational certificate and associate of applied science programs include:

1) MCC - automotive technology, data processing, electronics, and nursing;
2) DCC - agribusiness technology, business management, law enforcement, and nursing;
3) FVCC - business education and management; computer science, substance abuse counseling, and natural resource management;
4) Salish-Kootenai - carpentry, dental assisting, and environmental science; and
5) Fort Peck - automotive mechanics, building trades, and criminal justice.

Four-Year Campuses

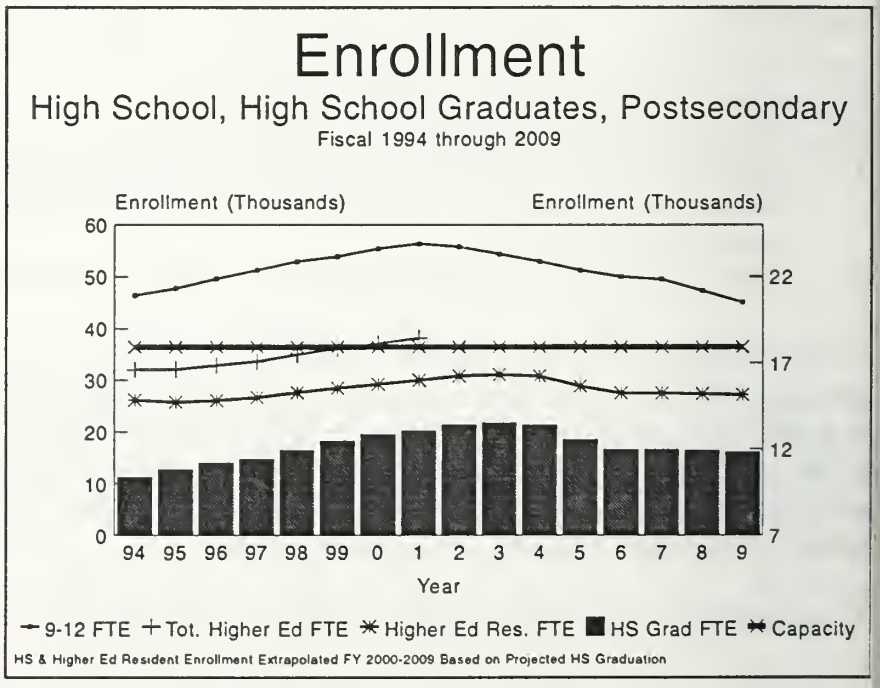
The Montana university system offers a limited number of certificates and two-year associate degrees on its four-year campuses. Applied sciences associate degrees include those in: 1) agricultural technology and a proposed course in railroad maintenance and operations at MSU-Northern; and 2) occupational safety and health at Montana Tech of UM. General associate of arts and associate of science degrees include credits for the first two years of a baccalaureate program that may be transferred to other campuses.

Enrollment

This section of the report examines enrollment projections and other state and national data to determine: 1) when Montana's postsecondary education system will most likely experience its highest enrollment; 2) which types of units will be impacted the most; and 3) comparisons between national and state enrollment, graduation, and job placement.

System Enrollment and Capacity

Graph 1



Projections shown in Graph 1 are estimates of enrollment provided by the Montana Office of Public Instruction (OPI), the Western Interstate Commission for Higher Education (WICHE), and the Montana Commissioner of Higher Education (CHE). As the top line in the graph shows, high school enrollment may reach a peak in fiscal year 2001 and decline slowly thereafter. High school enrollment estimates for grades 9-12 FTE students were provided by OPI for all years up through fiscal 1999. These data were then extrapolated forward to fiscal year 2009 based on fiscal 1999 projected enrollment in grades K-8. Three basic points to consider when analyzing the extrapolated data are: 1) enrollment may be overstated because it does not account for students who may not complete a high school education; 2) possible increases in older students returning to school are not included; and 3) the extrapolation method does not factor in the possible net migration of people into or out of Montana. As a result, the estimates may be either under- or over-stated, depending on the combination of circumstances actually occurring.

As demonstrated by WICHE data shown in the columns at the bottom of the graph (scaled on the right

axis), the number of students graduating from high school will be at the highest levels in fiscal years 2002 and 2003. These are the years in which the highest number of "baby boomlet" students will be leaving high school and moving into the labor force and the postsecondary school system. A comparison of postsecondary enrollment to high school enrollment four years earlier suggests that approximately 60 percent of high school students will enroll in a higher education unit. If that ratio is not changed by policy decisions or economics, the resident population in the postsecondary system will be at its highest in fiscal years 2002 through 2004 before beginning to decline.

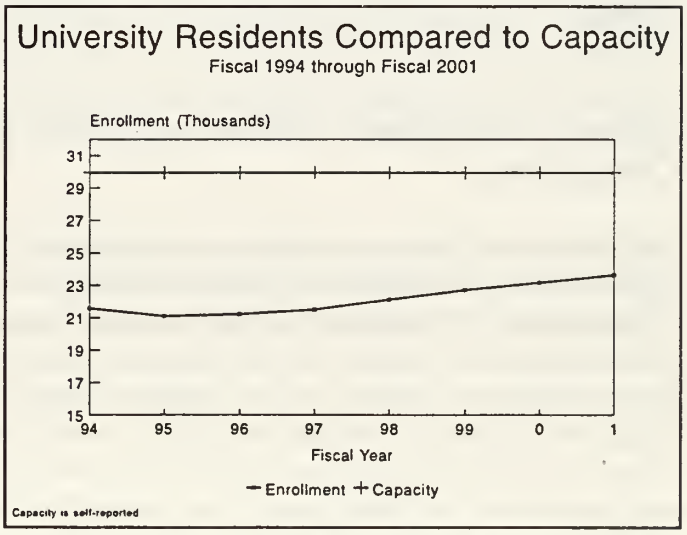
The three lines in the center of Graph 1 show a combination of data provided by: 1) CHE during the July, 1995 PEPB meeting; and 2) the community colleges. The flat, heavy line shows the self-reported capacity of Montana's postsecondary education facilities. The units estimate that they can enroll up to 36,400 students without building more classroom and academic support facilities. This could be accomplished by: 1) holding more classes earlier in the day, during the evenings, and on Saturdays; and 2) taking advantage of burgeoning telecommunications technology. Implementation of telecommunications technology may result in increased student FTE if there is a net increase in those who have access to education. The student FTE on campus could also decrease if more students could receive education in their communities instead of on campus. Regardless of the impact of telecommunications, some schools suggested that a thin housing market in their communities might require construction of additional dormitory space if the 36,400 student limit was to be reached.

The graphed data provided by CHE and the community colleges shows that total projected higher education enrollments, including both resident and non-resident students, are projected to exceed total capacity by fiscal year 2000. The line depicting higher education resident enrollment only, which has been extrapolated from fiscal year 2001 based on high school graduation rates, shows that **total resident enrollment will not exceed capacity in the peak years**. The university system can provide for all projected resident students by reducing and managing the system-wide, non-resident enrollment more stringently in fiscal years 1999 through at least 2005.

Enrollment and Capacity Analysis by Type of School

While the current enrollment projections indicate that enough capacity exists within the Montana postsecondary system to serve all Montana residents, enrollment compared to capacity varies by unit type. Graphs 2 through 5 illustrate this fact.

Graph 2

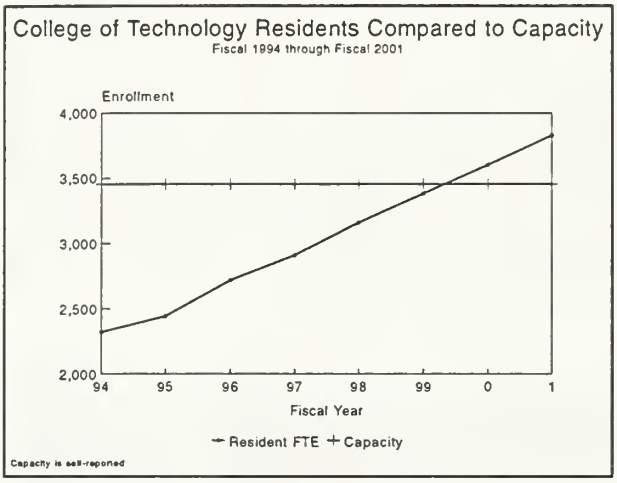


Graph 2 compares the four-year campus capacity to projected enrollment through fiscal year 2001. It is clear from the trend shown by the bottom line that these campuses have sufficient capacity to increase the numbers of residents served if non-resident FTE are limited. The same is true of the community colleges, as shown in Graph 3. The increase in enrollment appears to be entirely the result of increasing enrollment system-wide, as the ratio of projected community college

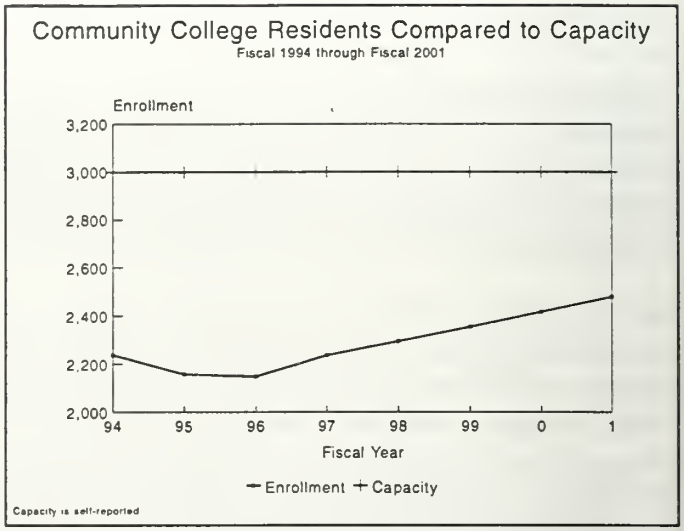
students to total enrollment is relatively constant.

The favorable capacity vs. enrollment picture does not exist at the colleges of technology. In those colleges, even if no non-residents are admitted, the enrollment is projected to reach capacity by fiscal year 1999, as shown in Graph 4.

Graph 4

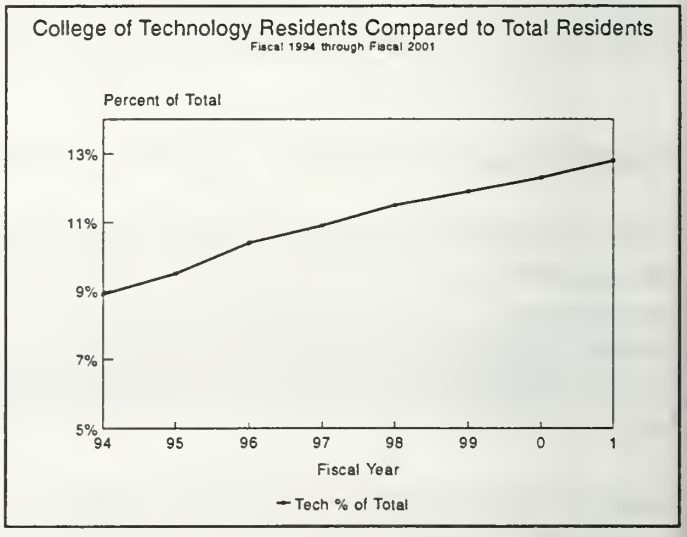


Graph 3



The sharp increase in the numbers of students projected at the colleges of technology are certainly partially a result of increasing enrollment system-wide. However, as graph 5 shows, the projected number of resident students at the colleges of technology is also increasing as a percentage of the total residents in the university system. College of technology resident enrollment is projected to increase from 8.9 to 12.8 percent of total resident enrollment from fiscal 1994 to fiscal 2001. That compares to a community college enrollment projected at just over 8.0 percent of total enrollment during the same period. The projected student demand for job skill training at the colleges of technology exceeds the demand for the lower division college courses and vocational training at the community colleges.

Graph 5



National Enrollment, Degree, and Job Comparisons

The National Center for Education Statistics reported that in the fall of 1993 Montana enrolled approximately 12 percent of its post secondary education students in two-year institutions. This ranking placed Montana at nearly the lowest level nationally. The median ranking state was South Carolina with approximately 40 percent and the highest ranking state was California with an average of nearly 70 percent of students in two-year institutions. Since 1993, Montana has placed more emphasis on two-year education. As a result, the two-year enrollment increased to over 14 percent of total enrollment (resident and non-resident) in fiscal years 1994 and 1995. That percentage is expected to continue increasing to 17 percent by fiscal 2001 as a result of the increases in the colleges of technology noted above. However, that still leaves Montana far short of the national median.

The National Center for Education Statistics also reported that associate degrees awarded in Montana in fiscal 1993 constituted 13.6 percent of all degrees, while bachelor's degrees accounted for 71.4 percent. National averages are 23.8 percent and 53.8 percent respectively. Native American students accounted for 19 percent of associate degrees conferred in fiscal year 1993, but only 2 percent of the bachelor's degrees. It is apparent that Montana places much more emphasis on four-year education and less on two-year education than other states. However, it is also clear that the Indian colleges are providing a substantial opportunity for Native American students to obtain a technical education.

Bureau of Census data from the Department of Commerce for calendar 1989, shown on Attachment A, indicate that nearly 32 percent of Montana workers employed full time had some college education, while nearly 24 percent had a bachelor's or higher degree. In addition, career officials at MSU-Bozeman, UM-Missoula, and Helena College of Technology indicate that most technical college graduates are placed in Montana, but nearly one third of four-year college graduates are employed outside the state. While these data do not address under or over employment, they do indicate the likelihood that the Montana labor market: 1) could use more people with two-year training; and 2) can't absorb efficiently all those with four-year degrees.

The Bureau of Census data for 1989 also indicate that some college education without attainment of a four-year degree results in higher average annual income in nearly all fields of employment. Operators, laborers, farmers, and other agricultural employees experience the lowest income increases associated with postsecondary education. However, some incomes in those groups clearly are not related to higher education, while others increase substantially with increased education. Managerial and specialty employees achieve the highest incomes associated with at least some college education.

Current Comparisons

The purpose of this section is to compare colleges of technology, public community colleges, and the four-year units of the university system in the areas of: 1) total budget and cost per FTE student; 2) total instruction and instructional costs per FTE student; 3) the cost of instruction relative to the total budget; and 4) resident and non-resident costs of education. Four assumptions have been applied throughout this analysis: 1) total budgets for the colleges of technology in Missoula and Butte were estimated based on the ratio of total cost to instruction cost at other colleges of technology (total cost estimated at 1.818 times the budgeted cost of instruction); 2) lower division tuition at the four-year units was used as a proxy for the student cost of two-year education on the four-year campuses; 3) tuition per student was based on 15 credit hours per semester; and 4) Western University Exchange (WUE) students were included with non-resident FTE.

The assumptions made here result in: 1) estimates for total costs per student at the Missoula and Butte colleges of technology; 2) over-stated state support per resident FTE; and 3) understated resident tuition as a percentage of total cost in the four-year units. However, the assumptions do not appear to materially affect the analysis or the conclusions.

Total Budget and Cost per FTE

The total current unrestricted budgets and FTE students shown in Table 1 are data taken from the

Montana University System (MUS) fiscal 1996 operating budgets. This table clearly shows that the total cost of education is less at two-year schools. The total costs of education per FTE in the two-year units are between $4,700 and $5,400 for fiscal 1996, while the comparable costs at the four-year units range between $5,400 and nearly $6,800 each year. The weighted average cost for all students is $5,839, but the weighted average cost for only non-resident students is $6,062. The average cost of non-resident education is higher than the over-all average because most of the non-residents are concentrated in the three highest cost schools.

This table also demonstrates that per FTE costs at the colleges of technology are no longer higher than those at the community colleges. This is a reversal of the situation reported to the PEPB in a September, 1994 report entitled "Comparison of Costs Between the Community Colleges and the Colleges of Technology." At that time, total fiscal 1994 per FTE costs were nearly $1,300 higher at the colleges of technology. The reason for this reversal is two-fold: 1) the 1995 legislature appropriated $776,854 additional general fund to the community colleges for the 1997 biennium, thus allowing increased spending per student FTE; and 2) enrollment generally increased at the colleges of technology and decreased at the community colleges, thus causing a relative shift in student/faculty ratios. It is not clear whether this reversal is permanent or a result of temporary shifts in appropriations and enrollments. Neither is it clear whether relative costs at the community colleges and the colleges of technology would remain the same if the missions of those schools were altered.

Table 1
Two Year Education
Cost of Education Analysis
Fiscal 1996

College/Unit	Total* Budget	Total FTE Students	Total Cost/ FTE Student
CT Great Falls	$3,519,298	756	$4,655
CT Billings	2,142,440	446	4,804
CT Helena	2,626,614	520	5,051
CT Missoula*	3,342,124	676	4,944
CT Butte*	1,838,558	387	4,751
Miles Community College**	2,815,346	520	5,414
Dawson Community College**	2,330,843	450	5,180
Flathead Valley Comm. College**	5,586,509	1,178	4,742
UM-Missoula	59,759,641	9,933	6,016
Montana Tech-UM	11,701,151	1,732	6,756
Western Montana College-UM	6,149,416	1,119	5,495
MSU-Bozeman	62,732,808	10,109	6,206
MSU-Billings	17,625,612	3,292	5,354
MSU-Northern	9,453,863	1,702	5,555
All Student Totals and Averages	$191,624,223	32,820	$5,839
Non-Resident Totals and Averages			$6,062

* Excluding Public Service - Colleges of Technology in Missoula and Butte total budget extrapolated at 1.818 X Instruction
** Includes projected enrollment in community colleges based on fiscal 1996 fall enrollment
(Includes non-residents in Dawson and Miles Community Colleges)

Total Instruction and Instructional Costs per FTE

Table 2 shows that the cost of instruction per student is less at two-year schools. The total costs of instruction per FTE in the two-year units are between $2,072 and $2,934 for fiscal 1996, while the comparable costs at the four-year units range between $2,845 and $3,809 each year. The weighted average cost of instruction for all students is $3,207.

The table shows that the $1,111 average instructional cost difference between colleges of technology and community colleges reported in September, 1994, has largely disappeared. In the fiscal 1996 operating budgets, the weighted average cost of $2,709 at the colleges of technology is only $261 higher than the

weighted average cost of $2,448 at the community colleges. Again, it is not clear whether this change is a permanent trend or the result of a temporary increase in community college appropriation and a temporary decrease in community college enrollment.

Table 2
Two Year Education
Instruction per Student FTE
Fiscal 1996

College/Unit	Instruction	Total FTE Students	Instruction/ FTE Student
CT Great Falls	$1,935,212	756	$2,560
CT Billings	1,308,628	446	2,934
CT Helena	1,450,245	520	2,789
CT Missoula	1,838,168	676	2,719
CT Butte	1,011,207	387	2,613
Miles Community College**	1,518,074	520	2,919
Dawson Community College**	1,299,709	450	2,888
Flathead Valley Comm. College**	2,440,332	1,178	2,072
UM-Missoula	32,596,117	9,933	3,282
Montana Tech-UM	6,597,321	1,732	3,809
Western Montana College-UM	3,091,082	1,119	2,762
MSU-Bozeman	35,535,317	10,109	3,515
MSU-Billings	9,793,811	3,292	2,975
MSU-Northern	4,841,940	1,702	2,845
All Student Totals and Averages	$105,257,163	32,820	$3,207

** Includes projected enrollment in community colleges based on fiscal 1996 fall enrollment
(Includes non-residents in Dawson and Miles Community Colleges)

Cost of Instruction Compared to Total Budget

Table 3 shows that instruction as a percentage of total budget is very similar at two-year and four-year units. With the exceptions of the Billings College of Technology at 61 percent instructional costs and FVCC at 44 percent, all units spend between 50 and 57 percent of their total budgets on instruction. Total costs per student at FVCC are lower than total costs at other community colleges, but not to the same extent as instruction costs. The relative difference may be the result of: 1) net lower total costs per FTE because the enrollment is over twice that of the other community colleges, thus yielding economies of scale; and 2) a greater portion of faculty may be less expensive part-time employees. This topic can be investigated further if the committee wishes.

Table 3
Two Year Education
Cost of Education Analysis
Fiscal 1996

College/Unit	Instruction	Total* Budget	Instruction % of Total
CT Great Falls	$1,935,212	$3,519,298	54.99%
CT Billings	1,308,628	2,142,440	61.08%
CT Helena	1,450,245	2,626,614	55.21%
CT Missoula*	1,838,168	3,342,124	55.00%
CT Butte*	1,011,207	1,838,558	55.00%
Miles Community College**	1,518,074	2,815,346	53.92%
Dawson Community College**	1,299,709	2,330,843	55.76%
Flathead Valley Comm. College**	2,440,332	5,586,509	43.68%
UM-Missoula	32,596,117	59,759,641	54.55%
Montana Tech-UM	6,597,321	11,701,151	56.38%
Western Montana College-UM	3,091,082	6,149,416	50.27%
MSU-Bozeman	35,535,317	62,732,808	56.65%
MSU-Billings	9,793,811	17,625,612	55.57%
MSU-Northern	4,841,940	9,453,863	51.22%
All Student Totals and Averages	$105,257,163	$191,624,223	54.93%

* Excluding Public Service - Colleges of Technology in Missoula and Butte total budget extrapolated at 1.818 X Instruction
** Includes projected enrollment in community colleges based on fiscal 1996 fall enrollment
(Includes non-residents in Dawson and Miles Community Colleges)

In summary, Tables 1, 2, and 3 indicate that there are no longer wide differences between the colleges of technology and the community colleges in the areas of: 1) total budget or instruction per FTE student; or 2) instruction as a percentage of total budget. However, the two-year units average about $1,100 less per FTE than the four-year educational units in total budget and $720 less in total instructional costs. Since the instructional budget is roughly the same percentage of total budget at all units, the instructional difference between the two-year and four-year schools must be in differing student/faculty ratios and pay scales. The remaining $380 difference per FTE must be in support, student services, and plant operation and maintenance programs. However, because all college of technology programs at Butte and Missoula except instruction have been integrated

into the parent university budgets, it is not possible to determine precisely which programs are contributing to the cost differences between the two-year and four-year schools.

Resident and Non-resident Costs of Education

This section analyzes costs of resident and non-resident education in the various Montana postsecondary schools. Table 4 contains resident data while Table 5 presents non-resident data. Assumptions are: 1) total budgets for the colleges of technology in Missoula and Butte are based on the ratio of total cost to instruction cost at other colleges of technology (total cost estimated at 1.818 times the budgeted cost of instruction); 2) lower division resident tuition at the four-year units was used as a proxy for the student cost of two-year education on the four-year campuses; 3) tuition per student was based on 15 credit hours per semester; and 4) WUE students are included with non-resident FTE and are assigned no state support.

Table 4 shows the total current unrestricted cost per FTE in column 2, which is divided into annual tuition for 15 credit hours per semester in column 3 and all other state and student support in column 4. While it is not entirely accurate, as discussed below, the basic assumption is that non-resident tuition provides the full cost of non-resident education. Assuming that, all other support in column 4 contains the state general fund, millage, miscellaneous late or drop/add charges, and any tuition in excess of that paid for 15 credit hours per semester, or the flat spot as applicable. In addition, all state support is applied to resident FTE, although, in reality, some state dollars support WUE students.

As noted earlier, the tuition charges shown at the four-year schools are the lower division tuition rates. The main points demonstrated in Table 4 are that: 1) resident tuition is somewhat less than one-third of the total cost at all schools, except FVCC; and 2) the resident tuition as a percentage of total cost is approximately the same whether the school is a two-year or a four-year school.

Table 4
Resident Cost of Education Analysis
Fiscal 1996

College/Unit	Column 1 Res. FTE Students	Column 2 Total Cost/ FTE Student	Column 3 Resident Tuition	Column 4 State/Other Support/Res.	Column 5 Res. Tuition % of Cost	Column 6 Tot. General Fund/Millage	Column 7 Total Res. Tuition/Other	Column 8 Budget for Residents
CT Great Falls	750	$4,655	$1,460	$3,195	31.36%	$2,374,478	$1,116,889	$3,491,367
CT Billings	429	4,804	1,464	3,340	30.47%	1,488,244	572,533	2,060,777
CT Helena	512	5,051	1,565	3,486	30.98%	1,813,542	772,663	2,586,205
CT Missoula	649	4,944	1,548	3,396	31.31%	1,813,542	1,395,094	3,208,636
CT Butte	380	4,751	1,544	3,206	32.51%	1,813,542	(8,239)	1,805,303
Miles Community College**	520	5,414	1,440	3,974	26.60%	1,951,046	864,300	2,815,346
Dawson Community College**	450	5,180	1,442	3,738	27.84%	1,635,586	695,257	2,330,843
Flathead Valley Com. College**	1,128	4,742	1,652	3,090	34.83%	3,800,521	1,548,870	5,349,391
UM-Missoula	6,583	6,016	1,769	4,247	29.40%	28,965,540	10,639,586	39,605,126
Montana Tech-UM	1,431	6,756	1,832	4,924	27.12%	8,684,266	983,371	9,667,637
Western Montana College-UM	1,031	5,495	1,741	3,754	31.68%	3,722,732	1,943,084	5,665,816
MSU-Bozeman	7,544	6,206	1,771	4,435	28.54%	34,867,039	11,948,304	46,815,343
MSU-Billings	3,047	5,354	1,768	3,586	33.02%	10,639,372	5,674,492	16,313,864
MSU-Northern	1,594	5,555	1,716	3,839	30.89%	6,172,327	2,681,643	8,853,970
All Student Totals and Averages	26,048	$5,839	$1,725	$4,114	29.54%	$109,741,777	$40,827,847	$150,569,624

** Includes projected enrollment in community colleges based on fiscal 1996 fall enrollment
(Includes non-residents in Dawson and Miles Community Colleges)

Table 5 shows a similar analysis of the non-resident cost of education. This table illustrates four points as discussed below:

Table 5
Non-Resident Cost of Education Analysis
Fiscal 1996

College/Unit	Column 1 Non-Res. FTE	Column 2 Total Cost/ FTE Student	Column 3 Non-Res. Tuition	Column 4 Tuition % of Cost	Column 5 Non-Res. Subsidy/FTE	Column 6 Non-Res. Total Cost	Column 7 Tot. Non-Res. Tuition/Regist	Column 8 Tot. Non-Res. Subsidy
CT Great Falls	6	$4,655	$3,434	73.77%	$1,221	$27,931	$20,604	$7,327
CT Billings	17	4,804	3,240	67.46%	1,563	81,663	55,087	26,576
CT Helena	8	5,051	3,605	71.37%	1,446	40,409	28,838	11,571
CT Missoula	27	4,944	3,586	72.52%	1,358	133,487	96,811	36,676
CT Butte	7	4,751	3,602	75.83%	1,148	33,256	25,217	8,039
Miles Community College**	NA	5,414	3,384	62.50%	2,030	NA	NA	NA
Dawson Community College**	NA	5,180	3,493	67.44%	1,687	NA	NA	NA
Flathead Valley Comm. College	50	4,742	3,724	78.53%	1,018	237,118	186,200	50,918
UM-Missoula	3,350	6,016	5,844	97.14%	172	20,154,515	19,577,400	577,115
Montana Tech-UM	301	6,756	5,953	88.12%	803	2,033,514	1,791,913	241,601
Western Montana College-UM	88	5,495	5,472	99.57%	23	483,600	481,536	2,064
MSU-Bozeman	2,565	6,206	6,105	98.38%	100	15,917,465	15,659,838	257,627
MSU-Billings	245	5,354	5,696	106.39%	(342)	1,311,748	1,395,618	(83,870)
MSU-Northern	108	5,555	5,636	101.47%	(82)	599,893	608,710	(8,817)
Non-Resident Totals and Averages	6,772	$6,062	$5,896	97.26%	$166	$41,054,599	$39,927,772	$1,126,827

** Includes projected enrollment in community colleges based on fiscal 1996 fall enrollment

1) Non-resident FTE - Column 1 shows that non-resident FTE in Montana are concentrated in the three highest-cost schools: UM-Missoula, Montana Tech-UM, and MSU-Bozeman. Therefore, the weighted average cost per student FTE in column 2 is $6,062 or approximately $220 higher than the $5,839 average cost of all students shown in Table 4.

2) Tuition as Percent of Cost - Column 4 shows that the tuition paid by non-resident students is two-thirds to three-fourths of the total cost of education in the two-year schools. That percentage approaches 100 percent in all the four-year schools except Montana Tech-UM, where non-residents pay 88 percent of the cost. The state and/or resident tuition subsidize the non-resident education to varying degrees in all schools except MSU-Billings and MSU-Northern. In those two schools, non-residents subsidize resident students by 6 percent and 1 percent respectively.

3) Dollar Amount of Subsidy per FTE Non-resident - Column 5 shows the dollar amount of non-resident subsidy. All two-year education subsidizes non-residents at the rate of $1,000 to $2,000 per year per FTE student. Among the four-year schools, the major subsidy is $803 per non-resident student at Montana Tech-UM. Non-resident students subsidize residents by over $300 at MSU-Billings and $80 at MSU-Northern.

4) Total Non-Resident Subsidy - Column 8 shows that the total non-resident subsidy is $1.1 million for fiscal 1996, reduced by miscellaneous late fees, drop/add charges, etc. incurred by the non-residents. This subsidy is concentrated at UM-Missoula, Montana Tech-UM, and MSU-Bozeman because they are the high cost schools and they have the majority of non-residents. The total subsidy at all other schools is relatively small because they have lower costs and few non-residents.

In summary, the tuition structure has not yet been adjusted so that all non-residents pay the full cost of their educations. While non-residents at MSU-Billings and MSU-Northern subsidize residents, non-residents in other schools, particularly two-year schools, do not pay full cost. Reasons for this may include: 1) the desire to raise non-resident tuition to 100 percent of cost over a period of years rather than in one year, particularly at the two-year schools and Montana Tech-UM; and 2) WUE costs at UM-

Missoula, Western Montana College-UM, and MSU-Bozeman; and 3) the possibility that if tuition were raised too rapidly, non-residents would go elsewhere, cutting into the $40 million revenue stream generated for Montana by non-residents.

Policy Issues

Policy issues discussed below include: 1) planning for peak projected enrollment in fiscal year 2004; 2) expansion of two-year programs; 3) state assumption of community colleges; and 4; non-beneficiary support in Indian Colleges. The discussion of each issue includes a summary of points made in the above narrative and options that the committee may wish to consider for further study, recommendations to the MUS, or proposed legislative action.

Planning for Peak Projected Enrollment in Fiscal Year 2004

Factors to be considered when discussing planning for peak projected enrollment in fiscal year 2004 include:

1) resident enrollment at the colleges of technology may exceed capacity by fiscal year 1999;

2) total enrollment in the entire postsecondary education system could meet or exceed capacity by fiscal 2001 unless non-resident enrollment is limited;

3) resident enrollment will not exceed system-wide capacity in the peak enrollment years;

4) two-year schools are less expensive to operate than lower division programs on four-year campuses;

5) Montana graduates far more bachelor's degree students than the national average and far fewer associate degree students;

6) Montana's job market could absorb more associate degree workers than are educated each year, but it cannot efficiently absorb all bachelor's degree workers; and

7) Montana students each pay a similar percentage of total costs, regardless of the school attended, but Montana subsidizes non-resident students, particularly at the two-year campuses.

PEPB planning options and actions include:

1) planning to expand instructional and academic support facilities to accommodate most resident and non-resident students who apply in the peak enrollment years of fiscal years 1999 through 2005. This action will result in increased capital costs for facilities that may not be needed if enrollment declines as projected in mid-decade of the next century;

2) planning to raise tuition for non-residents so that they pay their own way and limit the number of non-residents to those who can be accommodated after residents are served. These actions may result in enrollment of fewer non-residents, more space for residents on the campuses, and reduced cash flow to the state. This action would also necessitate planning to raise state support and/or resident tuition to compensate for the reduced non-resident revenue stream;

3) planning to cap resident and non-resident enrollment at approximately the present levels to allow maintenance of current tuition/support ratios and non-resident revenue streams. This action would

require limitation on access to specific units, particularly the colleges of technology, and to the system in general during peak enrollment years. This option would not prepare students specifically for Montana's job market, and it may result in enforcement of higher admission standards; and

4) planning to make greater use of telecommunications, increase class sizes, and limit choices so that more students may be served at a lower cost during the peak enrollment years.

Expansion of Two-Year Programs

Regardless of policy decisions made in the process of planning for peak enrollment during the first half of the next decade, policies for expanding programs and enrollment or re-aligning enrollment in the two-year programs may also be considered. Factors to be considered in discussing these policies include:

1) limited vocational/technical capacity compared to projected enrollment;

2) available community college capacity compared to projected enrollment;

3) limited Montana job market for bachelor's degree workers compared to that for technically trained people; and

4) higher salaries earned by those who have bachelor's degrees.

PEPB planning options and actions include:

1) increasing vocational/technical capacity to serve more students. This could be done by: a) expanding current vocational facilities; b) expanding vocational programs at the community colleges; c) providing non-beneficiary support to students attending accredited Native American community colleges and some method of credit transfer; d) expanding vocational programs at the four-year campuses; or e) limiting enrollment, regardless of the demand for technical workers;

2) encouraging more high school graduates to enroll in two-year education programs. Successful accomplishment of this option could allow more Montana residents to fill higher paying jobs in the state than if they had only high school diplomas, thus providing greater opportunity.

3) diverting four-year students to two-year programs on community college or four-year campuses. This action could produce workers more in proportion to the Montana job market. However, it could deny some Montana students the opportunity to get an in-state four-year degree in the fields of their choice that would make their skills marketable anywhere outside of Montana; and

State Assumption of Community Colleges

Factors to consider in discussing policy decisions relative to state assumption of community colleges include;

1) development of a seamless public university system where programs in all units are coordinated for

the broadest service to Montana students;

2) reduction of local control if the boards of trustees are replaced with advisory boards;

3) changing the mission of the community colleges to either a vocational school or a junior college serving only students expecting to transfer to another school. The current mission combines both forms of education;

4) reductions in local property tax support of the colleges with increasing state tax support;

5) possible community college access to more administrative and academic support.

PEPB planning options and actions include:

1) total absorption of the colleges into the university system as has been done with the colleges of technology;

2) some sort of a hybrid state/local partnership where, for example, the state might provide increased funds and resources in exchange for the rights to make student placements and affect the school mission; and

3) continuing to operate the community colleges as they are now being operated.

Non-beneficiary Support to Indian Colleges

Factors to consider in discussing policy decisions relative to non-beneficiary student support in Native American community colleges include: 1) quality, access, and cost of the tribal programs; and 2) the state's inability to exert control in areas such as policy, program, credit equivalency, or student fee waivers. State non-beneficiary students have enrolled at the Indian schools, but they are not yet guaranteed: 1) any reduction in costs; or 2) credit transfer to state-supported schools.

PEPB planning options and actions include:

1) continued contracting with the Indian colleges, as the 1995 legislature allowed, to educate some non-beneficiary students. The state has no control over the above factors, but the placement of state non-beneficiary students at Indian schools might allow continuation of education for some place-bound students; and

2) adjusting the terms of the bill and the state/tribal contract so that the state has more control over: a) quality, access, and cost; b) programs for non-beneficiary students; c) transfer agreements; and d) fee waivers for non-beneficiary students.

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Earnings by Occupation and Education

State of MONTANA

PERSONS WHO WORKED FULL TIME IN 1989 BY EDUCATIONAL ATTAINMENT AND MEAN INCOME
(UNIVERSE: Persons 18 years and over in the experienced civilian labor force who worked with earnings in 1989

	------ALL PERSONS-----			--12TH GRADE OR LESS--			-HIGH SCHOOL GRADUATE-			SOME COLLEGE, NO BACH.			-BACHELOR OR GRADUATE-		
	#	PCT	INCOME	#	PCT	INCOME	#	PCT	INCOME	#	PCT	INCOME	#	PCT	INCOME
TOTAL	**196,981**	**100**	**$24,038**	**17,782**	**9.0**	**$19,046**	**69,417**	**35.2**	**$20,915**	**62,819**	**31.9**	**$22,603**	**46,963**	**23.8**	**$32,465**
MANAGERIAL & SPECIALTY	**51,233**	**100**	**$31,531**	**1,309**	**2.6**	**$23,602**	**8,189**	**16.0**	**$23,793**	**13,033**	**25.4**	**$27,677**	**28,702**	**56.0**	**$35,850**
Exec, Admin, & Managerial	27,425	100	$31,183	1,069	3.9	$24,823	6,548	23.9	$24,818	8,886	32.4	$30,474	10,922	39.8	$36,198
Professional Specialty	23,808	100	$31,932	240	1.0	$18,162	1,641	6.9	$19,702	4,147	17.4	$21,684	17,780	74.7	$35,637
TECHNICAL, SALES & ADMIN SUPPORT	**57,726**	**100**	**$21,413**	**2,900**	**5.0**	**$18,275**	**21,069**	**36.5**	**$19,297**	**22,893**	**39.7**	**$20,299**	**10,864**	**18.8**	**$28,698**
Technicians & Related Support	6,537	100	$24,878	207	3.2	$23,061	1,540	23.6	$21,625	2,911	44.5	$23,589	1,879	28.7	$29,741
Sales	23,770	100	$24,787	1,420	6.0	$19,226	8,499	35.8	$22,168	8,278	34.8	$23,237	5,573	23.4	$32,501
Admin Support (including Clerical)	27,419	100	$17,661	1,273	4.6	$16,437	11,030	40.2	$16,760	11,704	42.7	$17,404	3,412	12.4	$21,912
SERVICE	**21,280**	**100**	**$14,575**	**3,621**	**17.0**	**$12,244**	**9,345**	**43.9**	**$13,537**	**6,511**	**30.6**	**$15,446**	**1,803**	**8.5**	**$21,496**
Private Household	258	100	$9,145	81	31.4	$9,998	95	36.8	$9,040	61	23.6	$8,279	21	8.1	$8,839
Protective Service	3,384	100	$22,871	209	6.2	$19,186	1,087	32.1	$21,726	1,455	43.0	$22,913	633	18.7	$25,959
Other Service	17,638	100	$13,063	3,331	18.9	$11,863	8,163	46.3	$12,498	4,995	28.3	$13,358	1,149	6.5	$19,268
FARMING, FORESTRY, & FISHING	**17,368**	**100**	**$20,668**	**2,942**	**16.9**	**$17,816**	**6,702**	**38.6**	**$20,392**	**5,355**	**30.8**	**$21,073**	**2,369**	**13.6**	**$24,076**
Farm Operators & Managers	12,177	100	$22,107	2,027	16.6	$19,347	4,483	36.8	$22,207	3,885	31.9	$22,090	1,782	14.6	$25,028
Other Agricultural & Related	4,042	100	$15,365	760	18.8	$13,503	1,804	44.6	$15,887	1,089	26.9	$15,225	389	9.6	$16,979
Forestry & Logging	1,104	100	$23,844	150	13.6	$18,848	404	36.6	$20,672	379	34.3	$27,496	171	15.5	$27,625
Fishers, Hunters, & Trappers	45	100	$29,806	5	11.1	$21,800	11	24.4	$9,382	2	4.4	$11,000	27	60.0	$41,002
PRECISION PROD, CRAFT & REPAIR	**24,293**	**100**	**$25,614**	**3,061**	**12.6**	**$23,968**	**10,952**	**45.1**	**$25,166**	**8,307**	**34.2**	**$26,307**	**1,973**	**8.1**	**$27,739**
Mechanics & Repairers	10,385	100	$24,301	1,282	12.3	$22,167	4,789	46.1	$23,832	3,703	35.7	$25,210	611	5.9	$26,956
Construction Trades	7,315	100	$26,493	901	12.3	$23,545	3,124	42.7	$26,495	2,559	35.0	$27,904	731	10.0	$25,179
Extractive	1,035	100	$33,567	185	17.9	$33,941	509	49.2	$32,453	252	24.3	$29,684	89	8.6	$50,155
Precision Production	5,558	100	$25,428	693	12.5	$25,187	2,530	45.5	$24,582	1,793	32.3	$25,820	542	9.8	$28,394
OPERATORS, FABRICATORS, & LABORERS	**25,070**	**100**	**$23,625**	**3,949**	**15.8**	**$21,466**	**13,149**	**52.4**	**$23,690**	**6,720**	**26.8**	**$24,191**	**1,252**	**5.0**	**$26,729**
Machine Ops, Assemblers, & Inspectors	7,897	100	$22,067	1,321	16.7	$20,655	4,038	51.1	$22,037	2,121	26.9	$22,538	417	5.3	$24,434
Transportation & Material Moving	11,015	100	$26,784	1,645	14.9	$24,180	5,856	53.2	$26,458	2,963	26.9	$27,995	551	5.0	$31,514
Hndlrs, Equip Cleaners, Hlprs, & Lab	6,530	100	$20,410	1,049	16.1	$18,265	3,479	53.3	$21,186	1,689	25.9	$19,745	313	4.8	$22,557
UNEMPLOYED, LAST OCCUPATION MILITARY	**11**	**100**	**$24,000**	**0**	**0.0**	**.**	**11**	**100**	**$24,000**	**0**	**0.0**	**.**	**0**	**0.0**	**.**

Attachment A

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MONTANA UNIVERSITY SYSTEM

Findings From the 1995 SHEEO Survey on Statewide Data System Capabilities

Prepared for the 1995 NCES Summer Data Conference
Session on Issues in Student Tracking

July 20, 1995

Alene Bycer Russell

SHEEO

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Table 1

Current Status of Statewide Student Unit Record Databases	
	No. of States
Comprehensive statewide database exists at the SHEEO level, containing student records from four-year and two-year public institutions	32
Statewide database exists at the SHEEO level, but it is not comprehensive	5
Significant multi-institutional databases exist, but not at the SHEEO level	2
More limited multi-institutional databases exist	2
No multi-institutional databases exist	9

Table 1-A

Current Status of Statewide Student Unit Record Databases		
Comprehensive statewide database exists at the SHEEO level, containing student records from four-year and two-year public institutions		
Alaska	Louisiana	North Dakota
Arkansas	Maine	Ohio
California	Maryland	Oklahoma[1 2]
Colorado[1]	Massachusetts	South Carolina
Connecticut	Minnesota[1 2]	Tennessee
Georgia	Missouri	Texas
Hawaii	Nevada	Utah
Idaho	New Hampshire	Virginia[1 2]
Illinois	New Jersey	West Virginia
Indiana[1]	New Mexico	Wisconsin
Kentucky[1]	North Carolina	
Statewide database exists at the SHEEO level, but it is not comprehensive		
Mississippi[3]	Vermont[4]	
Oregon[3]	Washington[5]	
South Dakota[3]		
Significant multi-institutional databases exist, but not at the SHEEO level		
Florida[6]		
New York[7]		
More limited multi-institutional databases exist		
Arizona[8]		
Pennsylvania[9]		
No multi-institutional databases exist		
Alabama	Montana	
Delaware	Nebraska	
Iowa	Rhode Island	
Kansas	Wyoming	
Michigan		

Also contains student records from at least some independent, non-profit colleges.
Also contains student records from at least some proprietary schools.
Contains four-year institutional data only.
Separate databases exist for the University of Vermont and the Vermont State Colleges System.
Limited unit record enrollment data exist, but more complete records on financial aid recipients are collected; extensive tracking capabilities exist across state agencies.
Although no database resides at the Postsecondary Education Planning Commission, separate databases exist for the State University System, the State Board of Community Colleges, and the Florida Education and Training Placement Information Program. These databases are linked, and students can be tracked across systems.
Separate databases exist for SUNY and CUNY.
Limited multi-institutional files exist, separately for three four-year institutions and for community colleges.
A database exists for the State System of Higher Education, but not linked to other institutional data.

Table 2

Types of Statewide Student Databases	
	Number of States
Enrollment	40
Completions	35
Applicants for admission	15
Financial aid	22
Student courses	23
Assessment/performance	15
Student outcomes after college	9

Table 3

Uses of Statewide Student Databases (In Order of Frequency Cited)	
	No. of States
Persistence/completion/time to degree studies	33
Student transfer studies	32
Studies of minority students	32
Enrollment projections	25
IPEDS reporting (fall enrollment & completions)	24
K-12 feedback reports	23
Remedial education studies	22
"Report card"/accountability reporting	21
Student Right-to-Know Reporting (intended use)	20
Financial aid studies	18
Studies of admissions standards	17
Vocational-technical reporting	11

Table 4

Inter-Agency Data Sharing		
Type of Agency	Data Sharing Arrangements Currently in Place	Data Sharing Arrangements in the Discussion/ Planning Stage
	No. of States	No. of States
State department of education (K-12)	10	10
Postsecondary agencies in other states	3	6
State employment records	11	9
State corrections	3	3
Federal training/ employment records	3	4
The military	5	2
Private sector employers	2	3

Table 4-A

Inter-Agency Data Sharing		
Type of Agency	Data Sharing Arrangements Currently in Place	Data Sharing Arrangements in the Discussion/Planning Stage
State department of education (K-12)	Arkansas Florida Hawaii North Carolina North Dakota Oklahoma South Dakota Tennessee Texas Washington	Alaska California Colorado Maryland Minnesota Missouri New Hampshire New Mexico Oregon Utah
Postsecondary agencies in other states	Florida Missouri South Dakota	Colorado North Carolina North Dakota Oklahoma Utah Washington
State employment records	Alaska Colorado Florida Illinois Indiana Missouri North Carolina North Dakota Oklahoma Virginia Washington	California Idaho Minnesota New Hampshire New Jersey New Mexico Oregon South Dakota Utah
State corrections	Florida North Carolina Washington	North Dakota Oklahoma Oregon
Federal training/employment records	Alaska North Carolina Washington	Florida North Dakota Oklahoma Oregon
The military	Alaska Florida North Carolina South Dakota Washington	North Dakota Oklahoma
Private sector employers	Florida North Carolina	North Dakota Oklahoma South Dakota

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10%